Note Title 1/20/2011

x = Fx + Gu y = Hx + Ju

Poles of this system, iti,
are given by?

det [DiI-P] = 0
or agriculently, by

 $det \left[sI - F \right] \stackrel{4}{=} 0$

polynomial in s, "characteristic "
polynomial"

State-Feedback

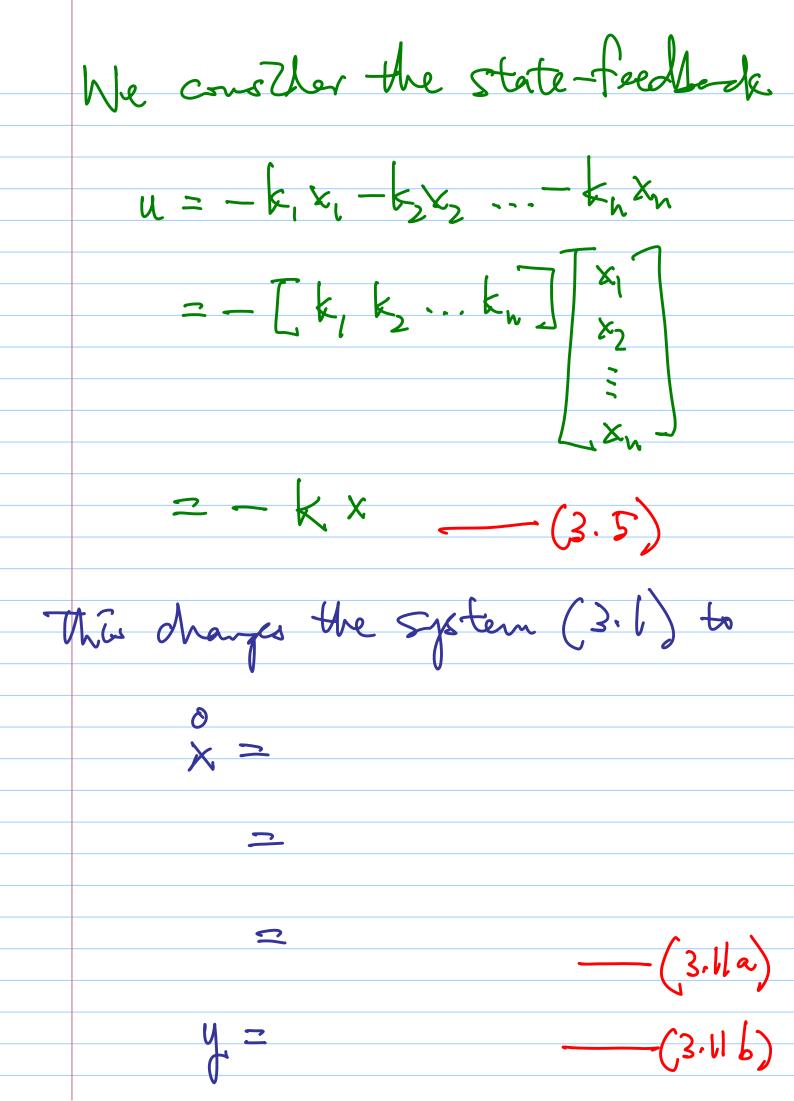
Thus, ghren the system?

 $x^{2} = Fx + Gu - (3.1a)$

the open-loop plas are gren the roots of:

 $a(s) = dot \left\{ sI - 1 \right\} = 0$

 $--(3\cdot 2)$



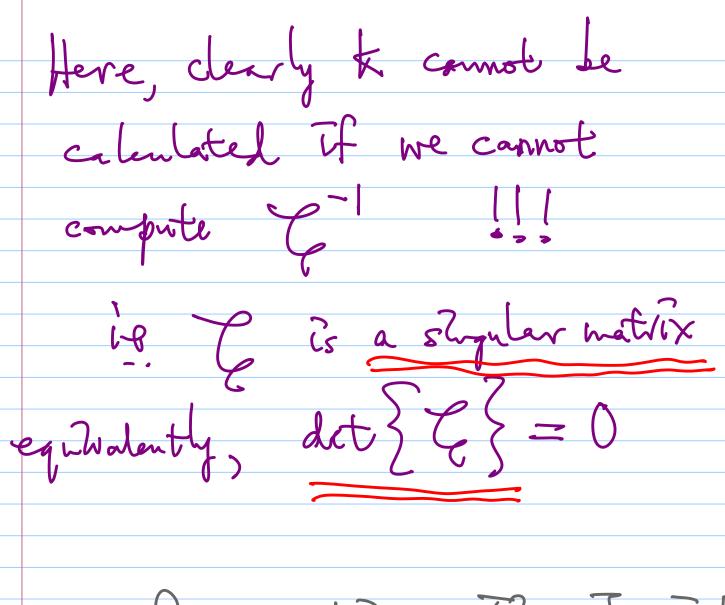
and the "dosed-log poles and obtained charged by the state-feedback (3.5) are from by: $\propto(s)=det$ We will specify that we want
our destred disch-loss poles to be given by? $\propto (\varepsilon) = 2 + \alpha' 2 + \alpha' 2 + \cdots + \alpha'$

Then, the formulaic solution (through all the "Intermediate steps of the Method I realization) is given by Ackermanns torma? K = [00...0;1] () denoted also (n-1) entries for k 2n
as Co[F,G]

Where

G AG FG FG

T G $\mathcal{L}(F) = F^n + a_1 F^{n-1} + a_n T$



Thus, for the Linear Time-Invariant
System:

2 = fx + Gu

$$\chi = fx + Gu$$

$$\chi = Hx$$

$$(3.1)$$

 $u = -kx \qquad -(3.5)$

the following 3 statements are equivalent? The system (3.1) can have its "closed-losp placed placed any where by the State feedback (3.5) e [FG] is non-shynlar. . The system (3.1) is controllable.